ART. XXVI. *Public Health Reports, and Papers presented at the Meetings of the American Public Health Association in the years* 1875–1876, *with an Abstract of the Record of Proceedings,* 1876. Vol. III. 8vo. pp. 241. New York: Hurd & Houghton, 1877.

THE present volume of this valuable series is made up of the more complete and important papers presented at the meetings of 1875 and 1876. The essays are skilfully grouped under certain general heads. An analytical table of contents exhibits, under each heading, not only the subject of each article, but also a few lines indicating the train of thought in each.

Dr. AUSTIN FLINT treats of *Food in its Relations to Personal and Public Health.* Alimentation, unlike all the physiological processes dependent upon it, is under direct voluntary control. The latter can be reached, aside from drugs, only through the former. Mind and body, and even virtue and vice, depend on proper nutrition. The chief aim of the essay seems to be to combat popular errors as to the dangers of eating too much or too often. Appetite and liking are believed to be much safer guides than many people think. Variety, too, is desirable. It is a mistake to suppose that a healthy stomach is strengthened by confinement to a few easily digested aliments. Long intervals between meals are usually anything but beneficial. Growing children are too often practically underfed, of course with baneful results. This usually proceeds from mistaken ideas among parents and teachers. With girls, a feeling that a hearty appetite for substantial food is vulgar and unladylike, does infinite harm. The influence of semi-starvation upon themselves and the next generation is as obvious as it is deplorable.

Hon. EMORY WASHBURN, of Cambridge, Mass., contributes a paper on *Expert Testimony and the Public Service of Experts.* The relation of this topic to public health is perhaps rather remote. From the social and professional eminence of the writer, however, we had reason to look for some new light upon a subject so much discussed of late years, and with such differing degrees of wisdom. The present effort scarcely meets our just expectation. The author disappoints us by telling us only what has been already told again and again; while he quietly ignores the objections that have been urged against the course he proposes. His confidence in expert testimony seems small at best, and he complacently echoes the flings of English judges and writers. The actual exigencies, and the manifold difficulties in the way of any attempt to overcome the recognized evils, are scarcely noticed. The idea that appointment of experts by the courts would stop the vulgar clamour against them, is hardly compatible with what we know of the dispositions of men and the spirit and tendencies of English law.

A paper entitled *Expert Supervision in Construction of Public Institutions,* which, as here presented, is very brief, yet contains most important facts and suggestions. Dr. L. H. STEINER makes a very forcible and very just presentment of the inadaptedness, bad construction, unwholesome or otherwise objectionable arrangements, which nearly always characterize, to a greater or less extent, our buildings for public purposes. To avoid a continuance of mortifying blundering, he advocates the expert supervision of public institutions. Each building erected for a definite purpose should possess an exact adaptation to that purpose, whether it be as a school, a hospital, or a prison. Especially should each and all be so ordered, that its inmates or frequenters shall receive no injury from it. How well this obvious duty of the State toward the people is performed, in building, or allowing to be built, jails, hospitals, almshouses, schools, public halls, and even churches, we need not take time to inquire. The facts recently ascertained about our own city school-houses furnish sufficient and most painful illustration.

The employment of expert supervision, rendered obligatory by law, whereby no structure for public purposes should be planned or built, except under the inspection of an expert, conversant not only with general sanitary principles, but also with the special needs to be met,—this is the remedy here suggested for the deplorable waste of money, health, life, and national resources, which flows from the gross ignorance and incompetence too often entrusted with the creation of our public buildings.

Adverting to the important, and often very delicate questions, which arise from the interference with individual liberty, exerted or proposed, by legislation invoked in aid of public health, Dr. J. S. BILLINGS, in a paper entitled *Rights, Duties, and Privileges of the Community in relation to those of the individual, in regard to health*, exhibits the necessity of interesting and informing the lawyer, as well as the physician, engineer, and architect, concerning sanitary principles and efforts. In devising legislation, the assistance of a legal mind thus enlightened would be most valuable.

Dr. STEPHEN SMITH, of New York, contributes a most admirable exposition of the *Influence of Private Dwellings and other Habitations on Public Hygiene, and the relations of Sanitary Authorities to them.* Every family creates nuisances, dangerous to itself and to its neighbours. Skilful appliances, intelligently supervised, can reduce the nuisance and the danger to a minimum. The doctor's picture of the filth-engendering capabilities of a family is altogether too graphic to be pleasant. His description of the emanations from the family wash, and even of the appetizing fumes from the kitchen, is almost enough to make one forswear civilized life forever. A forcible illustration of the influence of household uncleanness upon mortality is drawn from the results which followed the institution of sanitary inspection of tenement houses in New York. In these dwellings the Health Board recently received power to exert effectual interference with whatever it deemed detrimental to public or private health. Into the separate houses of separate families, however, it was not allowed to go, except on special occasion. Notice the extraordinary result. One-half the population of the city, living in the tenement houses, furnished, at the time the Board began to exercise its almost despotic powers, 75.7 per cent., or more than three-fourths of the total number of all the deaths in the city. This fell nearly 7 per cent. the first year after the new measures, two more next year, and in five years had become reduced to 64.8 per cent.

Strictly speaking, one would suppose the officials would have as much right, and even obligation, to enforce the correction of disease-producing abuses in the house occupied by one family as in that tenanted by many. Had the written law not made this discrimination, how much greater had been the beneficent work of the Board. For, while unwholesome conditions were doubtless more numerous in the great aggregations of indigent humanity, it is notorious that they are constantly found in the homes of the middle classes and even of the wealthy and cultured. In England, the blood of royalty shows its common human weakness by yielding to sewer poison in its own palaces.

The course pursued with such success in the tenements consisted in semi-annual and special visitations, by which cleansing, white-washing, disinfection, proper condition of drains and cellars, etc., were secured. In the one year following the beginning of this system, nearly fifty thousand "ventilating windows" were constructed in the houses of this class.

"Sanitary architecture in our dwellings, and sanitary supervision in their management," is a great want of to-day in American communities. No building should be allowed until its plans and specifications have been examined and approved by competent sanitary inspectors. Certain prescribed requirements in regard to drainage, heating, lighting, and ventilation would soon come to be understood and met, even by ordinary architects and builders. But we are not over sanguine as to the faithful enforcement of wise ordinances in these days of demagoguery and municipal rottenness.

Under the head of Dangerous Employments and Harmful Processes, Professor E. S. WOOD, M.D., of Harvard, treats of *Illuminating Gas in its Relations to Health.* Workmen in the retort house, which is roofless and freely open at its sides, are exposed alike to great heat and to cold drafts. This, and perhaps the dust of coal and coke, lead to a large amount of bronchial and phthisical disease.

The sulphuric and sulphurous acid formed by combustion of ordinary gas is very injurious to plant life, and to many objects found in our dwellings. The writer does not seem to regard them as injurious to human health. A variety of gas made from water, and useful for heating, is condemned as excessively dangerous, being odourless, and containing deadly proportions of carbonic oxide. When mingled with some petroleum product, as it is when adapted to illuminating purposes, it acquires odour, and hence becomes much less dangerous.

Dr. GARVIN, living among the gigantic cotton-mills of Lonsdale, R. I,, discusses *Sanitary Requirements in Factories—Injurious Effects of Cotton Factories upon the Health of Operatives.*

Accidents from machinery can, and ought to be, largely prevented by instruction and warning from the overseer, and especially by inclosing all cog-wheels, belts, etc., which do not require to be exposed. Catarrhs, dyspepsia, anæmic troubles generally, arrested or imperfect growth, and development, are the commoner results of mill-work, continued too many hours per week, and begun often at a tender age. Infants suffer from the protracted deprivation of their natural food and maternal care generally. The feeding of young infants on artificial food, in order that the mothers may work in the mills, is justly characterized as little less than murderous.

Acute diseases, except as occurring in infants, do not seem especially favoured by factory life. But ailments dependent on debility and mal-nutrition, and especially upon continuous labour at an age which should be devoted to growth and development of body and mind, are lamentably prevalent. Laws prohibiting or limiting youthful labour have not been, but ought to be, most rigidly enforced.

A curious apparent anomaly is noticed in regard to the victims of consumption. While English weavers, descended from generations of operatives, and lank, stunted, or deformed, are far less likely to contract phthisis than dyspepsia, the fresh and plump young Irish, just come from rural life, fade away with consumption with alarming rapidity.

Three papers deal with the extremely important, though but little appreciated, subject of Marine Hygiene. Writing of the *Safety of Ships, and of those who travel in them,* the distinguished and efficient Supervising Surgeon General of the Marine Hospital Service, Dr. JOHN M. WOODWORTH, states that during 1875, 1502 American ships, and 85 foreign ships, on our coast, suffered disaster. Of 20,215 lives imperiled, 888 were lost. Wrecks, involving total loss, amounted, ships and cargoes, to some ten million dollars. Similar facts relative to British shipping are stated. With Mr. Plimsoll, Dr. Woodworth believes that a terrible proportion of this loss is due to unseaworthy ships and unseaworthy sailors, in other words, to preventable causes. Rigid inspection of vessels and men is perfectly practicable, and would be effective of much good. As already pointed out in his Marine Hospital Service Reports, the medical officers of this organization could be made examiners, before whom should appear every seaman offering himself for shipment. Without their certificate of soundness, shipment should not be allowed. Excessive competition in the carrying trade causes every effort to be made to reduce expenses. Vessels go short-handed at best, and when part of the crew break down while at sea, the consequences may often be disastrous.

Laws exist providing for the inspection of steam vessels; though in some cases its execution has been but a farce—apparently from the corruption of the officers. But, for sailing craft, nothing prevents owners from sending rotten ships to sea as long as they continue to hold together. And when, finally, they fall to pieces or become mere sieves, they are not apt to be safe in port.

Dr. GIHON, U. S. N., has an excellent paper upon the *Need of Sanitary Reform in Ship-life*. Air that is breathed over and over again and saturated with animal exhalations, is the grand evil that destroys the sailor. And, to make bad worse, it is a fact, incredible as it may seem, that in some of the finest ships in our navy the bilge is ventilated by gratings that open upon the berth-deck. All decks, too, are by the tyrant *custom of the service*, deluged with water daily. Phthisis and rheumatism, the two great scourges of the sailor, are the result of this foul and damp atmosphere. Syphilis, worse than the former in that it is indefinitely communicable, is borne all over the world in ships. The foul recesses of forecastle and hold, and the indescribable filth of the bilge, form admirable lurking-places for germs of zymotic disease.

These sources of disease are very largely capable of removal; but ignorance and indifference in the merchant service, and the same, with the addition sometimes of the absurd, jealous arrogance of the average naval commander, in the national ships, obstinately resist all efforts at improvement.

Thirty years ago, as Dr. A. N. BELL tells us, in a paper on *Marine Hygiene on board Passenger Vessels*, emigrants to this country met with a frightful mortality on ship-board. Ten deaths to the hundred passengers, he says, was considered a favourable result; while twenty to thirty was not uncommon. Partly owing to regulations established at the ports of departure, but much more to the increased use of steamships, the days of such awful slaughter are past forever. Of late years, the steerage deaths on steamers have been usually considerably less than one in a thousand, while in sailing vessels, it has varied, from 1864 to 1873, between five and fifteen.

Very briefly, but suggestively, Mr. JAMES T. GARDNER, Director of the State Survey of New York, points out the *Relations of Topographical Surveys and Maps to Public Health*. Only when the prevalence of diseases shall be fully and accurately known in connection with local conditions of surface, and subsoil, and strata, can we comprehend the relations which exist, and become capable of intelligent preventive action. The amount of moisture retained in a soil, for instance, upon which largely depends the greater or less amount of certain maladies, is determined by the combined operation of the surface configuration, the character of the soil, the nature of the underlying rock, and the shape, form, or slope of its strata. Combine the results of surveys, topographical, geological, and sanitary, of a large area—and the writer believes that the principal causes of disease will become obvious, and remedies practicable.

An essay by Dr. EZRA M. HUNT, of New Jersey, upon the *Sanitary Appointments and Outfittings of Dwelling Houses*, urges the necessity of keeping human excrement out of the sewers, and counsels its removal by tubs or buckets. His ideal system calls for sewers large enough to be freely patrolled, and containing a tramway. Into the general cavity enter from each house waste water pipes. From it a recess, or branch, passes beneath the sidewalk to the cellar or basement of each house. Here, through a locked gate, the buckets or tubs are received, placed in the car upon the tramway, while cleansed buckets are left in their place. Other kinds of house-refuse, each in separate vessels, could be removed in the same way. Of course, the key to the door from house to recess is kept by the householder. If desired, another door, from sewer to recess, could be arranged, to be controlled by the sewer-police. As thus protected from excremental contamination, the writer thinks sewage may safely empty into streams.

Dr. ELISHA HARRIS reports upon *Laws, Provisions, and Methods for securing the Benefits of general Vaccination throughout the Country.* The lessons drawn from foreign experience are noted, and suggestions made as to means by which vaccination may be rendered systematic and complete.

In a recent epidemic of *Scarlatina in Baltimore*, Dr. JOHN MORRIS finds corroboration of the views advanced by Dr. Alfred Carpenter as to the power of decomposing and diluted blood, from slaughter-houses, to give origin to this disease. A very small stream of water received the drainage of several slaughter houses, and after running a little more than half a mile became stagnant, in a low place. (The writer does not state whether the brook is here lost or not.) Water taken from this spot was disgustingly bad and putrid. Of a series of over 2000 cases, "East of Jones's Falls," the first occurred in this neighbourhood, and the disease was very malignant and very fatal. One physician lost his first five cases, on one street in this district. The vicinity of another creek similarly defiled has been the seat of "a very large number of cases" during the past year.

Though not confining himself closely to Dr. Carpenter's idea of blood as alone furnishing the specific poison, the writer is disposed to believe that the virus arises from animal matter decomposing under certain conditions.

C. T. LEWIS, Esq., Secretary of the Chamber of Life Insurance, New York, contributes a scholarly essay in which he contrasts the *Hygiene of Ancient and Modern Times*, and exhibits *the Influences of Civilization on the duration of Human Life*. In the ancient civilizations the State, or Society, was paramount. The individual must ever yield himself to the public. Early Christianity magnified the importance of the single man. Modern civilization reconciles and blends the two purposes into one. For, though the two principles seem to be, and perhaps upon a limited view really are, conflicting, yet in the wide field of human progress they are in perfect harmony.

Some of the more obvious and powerful causes leading to greater mean longevity in the human family are thus noted: the better care taken of infants, and also of the sick, infirm, and aged; the control acquired over epidemics, as the plague, cholera, scurvy, and many others, and eminently the smallpox; and, finally, a class of agencies which may be designated as hygienic and sanitary reforms generally.

To those who would find in natural evolution, by survival of the strongest, a sounder mode of progress for the race, our author points out the enormous cycles of ages required thus to bring men even to the condition in which we find them to-day in Borneo, Australia, New Zealand, and Patagonia. Do these results compare favourably with the work of civilization, as achieved during that single movement of the world's second-hand, which we call the period of authentic history? Among the races just named, man is old at forty, and dead or decrepit at fifty; while female beauty, at its height at fifteen, begins to decay at twenty-two. Wherever man enters upon any progression different from that of the brutes, it is by the influence of individual and hereditary culture superseding natural selection. Intellectual and moral forces rule where once mere animal power held sway.

Treating of *Summer Resorts for the Debilitated Children of our Cities*, Dr. JEROME WALKER shows that experiments already made have fully proved the very great usefulness of country and seaside air, even if for but a few weeks or even days, in preserving the lives of this class of our population. It seems, too, by no means impracticable to provide sanitary villages in healthful rural districts, to which temporary colonies of city poor could be successively sent during the hot months. Probably, however, a greater and more lasting good may be effected by enabling the poor to live in the country, with cheap transportation to their city work. Will not some George Peabody build a model village, near a great city, with cheap railway connection?

In a report upon *hospital ventilation*, **CARL PFEIFFER** hits the nail squarely on the head when he concludes that only by "forced ventilation"—preferably by a fan driving fresh air in—can purity of atmosphere be secured at all times and seasons. It is more than twenty years ago that the immense superiority of this method was established by the most conclusive competitive trials and experiments under the observation of such men as Pettenkofer, Grassi, Peclet, and Seifert. Morin, a great advocate of the aspiration method, confessed its inferiority after observing the two systems side by side in two halves of one building. The experience of American hospitals for the insane has taught the same lesson. It is not designed to maintain that aspiration never gives fair, or even excellent, results; but, simply, that in effectiveness, uniformity, and certainty, it cannot compete with propulsion.

Referring to the fact that what we call "sewer gas" has proved insusceptible to analysis, or to identification as any given chemical combination, Prof. W. H. **BREWER**, of the Scientific School at Yale, in a paper entitled the *Gases of Decay, and the Harm they cause in Dwellings, etc.*, ventures the hypothesis that decomposing gases may contain and support organic germs, just as liquids do infusoria. Several considerations, not needful tó be here repeated, seem to indicate that the effects produced by sewer gas are not of a character analogous to those known to proceed from any gaseous compound simply. Typhoid fever, originating from poison borne on the emanations from a sewer, is liable to be passed on from the original recipient to others. No one supposes that the gas, as such, can be handed on from one human body to another. There seems to be no reason why certain gases, or mixtures of gases, in a state of change, should not support and nourish peculiar organic germs, just as decomposing fluids are known to do.

Prof. **HORSFORD**, of Cambridge, has hit upon the "happy thought" of *a New Profession in the Service of Hygiene.* He would have a man well taught in mechanics, physics, hydraülics, chemistry, and in all sanitary lore, who should be called in to relieve those numberless miseries which so grievously afflict, in our day and generation, the dwellers in houses "with all the modern improvements." Whether the Professor writes in joke or in earnest we are not sure; but that, in all our cities, men who should fill the requirements here sketched would earn fat fees and immeasurable gratitude, we feel quite certain.

Recognizing the very great need for the *Popularization of Sanitary Science*, Prof. **CLAYPOLE**, of Antioch College, regards the schools as the best means available to this end. But to make such teaching vital and efficient in the public schools, teachers must be far better grounded in the theory and practice of hygiene than they now are. Improvement must begin at the top. Universities, academies, and normal schools must send out their graduates endowed with some acquaintance with the conditions which make for health or for disease in the habits of the individual and in the structure and surroundings of the school, the home, and the city. And the authorities which build school-houses must be forced to make them what they should be, and no longer allowed to stunt, and stifle, and blind, and poison the precious charge confided to them.

GEORGE E. WARING, Jr., sanitary engineer, points out the errors and dangers most liable to attend country houses, even of the more expensive class. We need hardly say that it is from the disposal of refuse and excrementitious matters, as a first cause, that nearly all these actual or threatened ills arise.

Some half a dozen articles we omit to notice, not so much for any want of interest or value, as because their teachings have come before our readers in other connections.

The work is handsomely printed on heavy, tinted paper, by the Riverside Press; is substantially bound in cloth. In both matter and form it is a creditable and useful book. B. L. R.

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ART. XXVII.—*Surgical Observations on Gunshot Wounds of the Hip-joint.* By B. VON LANGENBECK, Professor of Surgery in the University of Berlin, etc. etc. Translated by JAMES F. WEST, F.R.C.S., Senior Surgeon to the Queen's Hospital, and formerly Professor of Anatomy in Queen's College, Birmingham. 8vo. pp. viii. 63. Birmingham: White & Pike, 1876.

As the result of his experience during the Franco-Prussian war, Professor Von Langenbeck has contributed to surgical literature two essays, the first of which, on Gunshot Wounds of the Hip-joint, has been translated by Mr. West, of Birmingham, who also promises to do the same kind office by the second essay, which is entitled, "On Resections as seen in the light of their Results." The first essay, the one with which this notice has to do, was originally read at the first German Surgical Congress, and bears abundant marks of that thoroughness of investigation, which, when exercised upon ample material, leads to the exhaustiveness so often possessed by German monographs. Langenbeck's first intention was to speak of gunshot wounds of joints as a whole, but rightly considering that the special questions which arise in connection with the individual joints were such as to prevent the laying down of any abstract principles of general treatment, he decided to contract his scheme, and has confined himself to the discussion of gunshot wounds involving the hip-joint.

Statistics hitherto obtained, in Langenbeck's judgment, are not sufficient to establish with accuracy the principles upon which gunshot wounds of the larger joints should be treated; nor, from the nature of the case, is this state of things likely to be soon changed, or statistics, suitable to found accurate generalizations upon, collected. While thus condemning the bulk of our statistical inquiries, the Professor is particular to inform his readers that the defects are in no great degree the fault of observers, but are attributable to the exigencies of military surgery. The sudden accumulation of severely wounded, and the inevitable confusion attendant upon a great battle, must ever present great difficulties against that thorough study and primary classification upon which the appropriate treatment of each case of hip-joint wound must depend.

The important question in all wounds of the hip-joint is to determine which case will be best treated upon the expectant plan, which demands, or will demand, operative interference, and, should resection or amputation be required, to decide *when* the operation shall be performed. It is just here that the special characteristics of each case are of paramount importance. It is this all-important primary knowledge that the military surgeon finds it so difficult or impossible to obtain as the result of his own observation, and it is to contribute to our stock of knowledge on these particular points that the distinguished Berlin Professor has written this *brochure.* Hitherto surgical literature has recorded most unhappy